WHAT IS CLAIMED IS:

1. A magnetic bearing apparatus having a power amplifier for supplying a control current to a coil of an electromagnet of a control-type magnetic bearing, said apparatus characterized in that a non-linear component is provided in the rear of a stage where a control input signal of said power amplifier and a current feedback signal are added.

2. A magnetic bearing apparatus as claimed in claim 1, characterized in that said non-linear component is a conparator circuit.

3. A magnetic bearing apparatus as claimed in claim 1 or 2, characterized in that a remover is provided at an output side of said non-linear component for removing a displacement sensor carrier frequency signal band.

4. A magnetic bearing apparatus as claimed in claim 1 or 2, characterized in that a remover is provided at an input side of said non-linear component for removing a pulse width modulation (PWM) power amplifier carrier frequency signal band.

5. A magnetic bearing apparatus as claimed in claim 1 or 2, characterized in that a first remover is provided at an input side of said non-linear component for removing a pulse width modulation (PWM) power amplifier carrier frequency signal band and that a second remover is provided at an output side of said non-linear component for removing a displacement sensor carrier frequency signal band.